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# ***Soil and Water Conservation News***

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## Comments:

### From the SCS Chief

## Water—Keeping It Clean and Conserving It

Any farmer can figure out that muddy ditches and muddy water have to be causing problems for somebody downstream as well as on the farm. I know that the chemicals we put on the cropland must be washing off with the soil, too. Where they belong, they are a tremendous resource—out of place, they become a nuisance, a hazard, and a costly cleanup problem for some community.

Farmers aren't the only cause of dirty water, not by any means. But I think we can do our part to keep the problems from being unnecessarily serious. If we can keep the soil in place, we can hold the pesticides and fertilizer on the land also.

Water quantity hasn't been much of a problem on my Mississippi River bottomland except when there's just too much of it. But dry weather has appeared in many more States than usual the past few years, and water conservation has become a good idea for all of us. We can look to those who are doing an excellent job of attacking the water stewardship problem, like the High Plains Underground Water Conservation District in Lubbock, Tex.

Americans do waste a lot of water on the farm and in the house, and we ought to work together to be more efficient—better stewards of water as well as soil.



**Cover:** Bridge on bridge. Covered bridge travels to its new home. For preservation, this covered bridge was relocated from the site of a watershed project in Ohio. See article on page 7. (Photo, Kevin Elder, program coordinator, Fairfield Soil and Water Conservation District, Lancaster, Ohio.)



John R. Block  
Secretary of Agriculture

Peter C. Myers, Chief  
Soil Conservation Service

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Editor, Judith E. Ladd

Associate Editor, Nancy M. Garlitz

Assistant Editor, Donald L. Comis

Editorial Assistant, Ann P. Serota

Design Consultant, Christopher Lozos

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## News Briefs

### SCS Water Management Team in Texas Helps Farmers Save Water

A Soil Conservation Service water management team headquartered at Amarillo, Tex., is helping High Plains farmers improve irrigation efficiency, conserve water and energy, and reduce erosion on irrigated land. Soil Scientist Fred B. Pringle, Agronomist Randy L. Underwood, and Civil Engineer Jerry D. Walker make up the team. They are concentrating on developing new ways to increase irrigation and pumping efficiencies and improve the use of natural soil moisture.

In cooperation with Dr. Paul Unger, soil scientist with the USDA Agricultural Research Service (ARS) Conservation and Production Laboratory at Bushland, the SCS team is working on refining soil mapping of the High Plains area, county by county, to show water-holding capacity and rooting depth. The properties of previously mapped soil series are being measured in the field and in the laboratory. Variations in soil behavior caused by continued cultivation, profile modification, and erosion are being documented. The purpose of these studies is to improve our technical assistance to land users. The information will help farmers decide whether or not they should irrigate, how much water they should apply, and when.

SCS water management team members are also providing training and leadership for SCS field people who are using 31 mobile Field Water Conservation Laboratories (see article in June 1980 issue of *Soil and Water Conservation News*) to help High Plains farmers evaluate the efficiency of their furrow, center pivot, and sprinkler irrigation systems, pumping plants, and other irrigation operations. Since 1978, says Walker, SCS technicians have made 627 irriga-

tion evaluations with the mobile laboratories. Equipment in the trailers-turned-laboratories include turbine water meters, orifice water meters, velocity water meters, soil moisture meters, pressure gages, and other measuring devices.

Funding for the laboratories has come from the High Plains, Panhandle, and North Plains Underground Water Conservation Districts; Texas Department of Water Resources; Hockley and Cochran County Commissioners Courts; a natural gas company; SCS; and local soil and water conservation districts. The mobile laboratory effort has been so successful that six additional trailers have been purchased for use in other parts of the State. Funding for these trailers has come from the Edwards and Glascock County Underground Water Conservation Districts, SCS, and the Texas Department of Water Resources.

To refine and improve conservation tillage farming systems that leave crop residues on the surface of irrigated land, the water management team members are working with conservation farmers, ARS, and Texas agricultural experiment station personnel. The crop residues greatly reduce evaporation, which reduces the need to pump irrigation water. Any tillage operation that stirs the soil takes moisture out of it. This means that every soil disturbing operation that is eliminated reduces the amount of irrigation water needed.

Several High Plains farmers have learned that by leaving all residues from the previous crop on the surface and not disturbing the soil, they can eliminate irrigating before planting in the spring. Weeds are controlled by herbicides.

SCS team members are also working with Dr. Bob Stewart, director of the ARS Conservation Production Laboratory at Bushland, to help develop Limited Irrigation-Dryland (farming) System (LIDS) field trials.

With LIDS, developed by Stewart and his staff, all rows are furrow diked; then irrigation water is pumped about halfway down every other row, breaching the furrow dikes. If a rain occurs after irrigation

water is applied, runoff will breach additional dikes. As a result, about half the field receives full irrigation, about one-fourth gets limited irrigation, and the bottom end usually gets no irrigation. The actual length of the row that is irrigated adjusts itself as does the amount of land that is irrigated, depending on seasonal rainfall.

Seeding rates vary accordingly. With grain sorghum, the upper half of the field is planted at a rate of about 6 pounds of seed per acre; the next fourth, 3 pounds per acre; and the bottom part of the field is planted at the normal dryland rate of about 1.5 pounds of seed per acre. Under some conditions, only two seeding rates are needed. Underwood says that while using only about half the water required for a fully irrigated field, a furrow diked field gets about 80 percent of the yield.

To regulate the variable seed and fertilizer applications needed with furrow irrigation, a farmer in Panhandle, Tex., invented an attachment for his planter. Although it is not widely used yet, the attachment can be adapted to most planters.

The SCS water management team in the High Plains of Texas is focusing on total water management for irrigation farmers. Their long-term goals are improved conservation of the soil, water, and energy resources and lower pumping costs with more profits for farmers.

Dale D. Allen,  
public information officer, SCS, Temple, Tex.

## Call Goes Out for Volunteers

Thousands of volunteers are needed to help battle soil erosion and other natural resource problems, according to Peter C. Myers, chief of the Soil Conservation Service.

"Soil erosion is one of the most serious problems facing America today," Myers said. "People who will volunteer their time and talents to help the Soil Conservation Service and local soil and water conservation districts can put more conservation on the land while keeping Federal costs down."

In the new volunteer program, authorized by the Agriculture and Food Act of 1981, people could perform a wide range of services on a part-time or full-time basis, such as aiding with:

- Field surveys and layout of conservation practices;
- Conservation education programs in schools, churches, and clubs;
- Training of high school, vocational, and agricultural students for soil and land judging contests; and
- Building or making use of outdoor learning areas with schools, Scouts, and other groups.

"Volunteers won't be paid, but they will find it is satisfying and interesting work," Myers said. "They would not be considered Federal employees, but they will receive legal protection as well as insurance for any work-related injuries."

"Volunteers won't be used to displace current employees of USDA; we need all the trained conservationists we have," Myers said. "But volunteers can help us be more responsive to local needs without adding staff, and they can help free up more time for SCS field employees to work directly with landowners on solving conservation problems."

Anyone interested in volunteering can contact their local Soil Conservation Service office or local conservation district.

## Secretary Block Issues Statement on Land Use Policy

The Secretary of Agriculture has issued a revised statement on land use policy, Secretary's Memorandum 9500-2, as the first action in his new role as administrator of the Farmland Protection Policy Act (FPPA) of the Agriculture and Food Act of 1981.

The act gave the Secretary overall responsibility within the Federal Government for carrying out its provisions. Responsibility for providing national leadership in implementing the act has been delegated to the Soil Conservation Service Chief.

The Secretary's Memorandum discourages the unwarranted conversion of farmland, consistent with provisions of the FPPA, and also sets departmental policy regarding conversion of rangeland and forest land to nonagricultural uses. It also encourages the protection of wetlands and flood plains. It replaces similar memoranda issued in 1977 and 1978.

The memorandum assigns departmentwide coordination responsibilities to the Natural Resources and Environmental Committee, chaired by Assistant Secretary John Crowell.

## Acid Precipitation Conference Set

The New Hampshire-Vermont and Ontario Chapters of the Soil Conservation Society of America are sponsoring a conference on acid precipitation. The conference, "Acid Rain: A North American Challenge," will be held October 25-28, 1982, in Burlington, Vt.

The purpose of the conference is to provide a forum for U.S. and Canadian leaders from industry, government, academia, and private interest groups to discuss the issues surrounding the problem of acid deposition, to present current research results on the subject, and to suggest directions for future action.

One focus of the conference will be for participants to review the problems associated with acid precipitation and discuss alternative solutions as the basis for a position statement directed to Federal, State, and Provincial Governments.

For further information about the conference, contact Bryan Boyce, Program Chairman, Ontario Hydro, 700 University Avenue, Room A4A9, Toronto, Ontario M5G 1X6; telephone (416) 592-4306.

## SCS Publishes Status Map of Important Farmland Mapping

The Soil Conservation Service has recently published an automated map of the status of important farmland mapping in the United States. The map shows the 734 counties which had published important farmland maps by March 1, 1982, and the 412 counties which had mapping in progress.

The Inventory and Monitoring Staff at SCS National Headquarters and the Automated Mapping Staff in Lanham, Md., cooperated in producing the map. It will be updated at the end of each fiscal year.

Important farmland maps are intended to help officials, planners, and other citizens in their efforts to retain farmland in developing areas and to return farmland to its original productivity after land-disturbing activities such as surface mining. The maps are also used in assessing the possible environmental effects of Federal projects on prime farmland.

Copies of the map showing the status of important farmland mapping nationwide can be obtained from any SCS State Office.

## Indiana Forms Tillage Association

Indiana has started a farmer-run State conservation tillage association, similar to one started earlier this year by North Dakota and Manitoba.

The idea for the Indiana Conservation



Tillage Association came from Wabash County Soil and Water Conservation District supervisors, who have been inviting farmers from throughout the State to conservation tillage field days and meetings for the past several years. The district supervisors decided farmers needed a State association so they could meet, exchange information, and solve any problems they might have with conservation tillage.

Membership is open to anyone, including people from other States, but only farmers can be officers. The annual membership fee is \$15 and should be sent to: Dean Eppley, Treasurer, Route 3, Wabash, Ind. 46992.

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## Grassland Plowing Banned

The Colorado Land Use Commission invoked emergency powers recently to halt plow-out of fragile grasslands in Weld County, Colo.

A 15-day moratorium was issued to allow Weld County commissioners time to draft an ordinance that would make it illegal to plow the county's most fragile grasslands. Less fragile grassland could be plowed only after the landowner has developed a conservation plan with the local soil conservation district.

The grassland protection law was enacted because foreign investors and some local farmers were plowing large tracts of fragile lands in an effort to grow wheat. Residents feared another Dust Bowl.

Governor Richard Lamm endorsed the order to cease plowing after hearing testimony from county commissioners, Soil Conservation Service personnel, and concerned farmers.

In urging the commissioners to act, Governor Lamm said, "The people in Weld County are watching a part of their heritage blow away. We are committing a crime against the future."

**Donna Bouchard,**  
public information specialist trainee,  
SCS, Denver, Colo.

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## Ranchers Revive West Rocky Creek

In west Texas, several farsighted ranchers have brought a dried-up creek back to life through a program of brush management in cooperation with the Soil Conservation Service. West Rocky Creek, a tributary of the Middle Concho River, is located 20 miles west of San Angelo and drains a watershed of 74,000 acres of mostly rangeland. The creek had been dry for 40 years when it was revived in 1970.

Mesquite and other undesirable brush had invaded the watershed since the early 1900's. To grow 1 pound of mesquite takes as much water as to grow 3½ pounds of sideoats grama, a dense native grass. After the drought of 1917-18, the mesquite began soaking up the water that once fed West Rocky Creek and numerous underground springs. The creek, which had been an oasis to the pioneers, dried up altogether in the 1930's.

In the late 1930's and early 1940's, soil and water conservation districts were organized. By the late 1950's, landowners along the creek began signing Great Plains Conservation Program contracts with the Secretary of Agriculture to obtain SCS technical and financial assistance. Conservation planning included grassland restoration work. Landowners chained or dozed the invading mesquite and seeded the rangeland with perennial grasses, allowing the rainfall to recharge the underground springs.

West Rocky Creek has been flowing steadily since 1970. Brush control has been applied on about half of the watershed. Besides supplying water for livestock, the creek is also supplementing the water supply for San Angelo. Ranchers have established new pastures and increased their herds. Some have even doubled their stocking rate.

In Texas, noneconomic brush and weeds use an estimated 38 percent of the annual rainfall.

**Nancy M. Garlitz,**  
associate editor, *Soil and Water Conservation News*, SCS, Washington, D.C.

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## The Dust Bowl: An Agricultural and Social History

by R. Douglas Hurt

The Dust Bowl captured the attention of America in the 1930's. No where in the United States have the problems of erosion and the consequences on the livelihoods of residents come together to create a national sense of empathy and an understanding of the relationship between the wise use of land and a healthy agricultural economy as did conditions in the southern Great Plains. This book is the latest of many attempts to portray life in the Dust Bowl. After a discussion of pre-1930 agricultural settlement, agricultural conditions, and droughts, the author details the dust storms and dramatic "black blizzards" of the 1930's. He recounts how the storms caused annoyance, health problems, deaths, destruction of the land, and general disruption of life on the Plains.

The contribution of this book, especially to conservationists, is in meshing the human repercussions of the Dust Bowl with geography, climate, farming practices, economic conditions, and agricultural technology in explaining why the Dust Bowl occurred, and why it need not reoccur. The part of the Soil Conservation Service, conservation districts, and State governments in teaching and urging wind erosion control and moisture conservation measures is detailed.

The author concludes that when droughts occur, the avoidance of Dust Bowl conditions is up to the farmers and ranchers. He demonstrates that SCS played a large part in making the elements of sound conservation practices known.

*The Dust Bowl: An Agricultural and Social History* is available for \$9.95, paperback, \$19.95, hardbound, from Nelson-Hall Inc., Publishers, 111 North Canal Street, Chicago, Ill. 60606.

Review by Douglas Helms, historian, Planning and Evaluation, SCS, Washington, D.C.



## Emergency Team Works Fast to Restore Flood-Damaged Streams

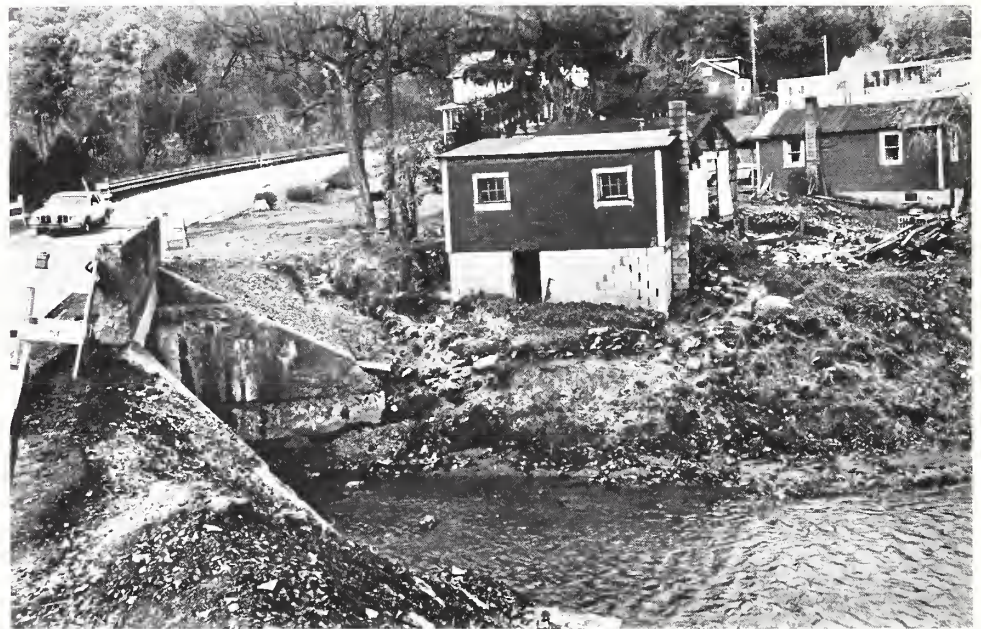
On August 20, 1980, the Soil Conservation Service and others worked overnight during a flood-threatening storm to remove a railroad bridge that had collapsed in a flood a week earlier. That flood had killed seven people and cost Brady's Bend, Pa., more than \$50 million in damages. The fallen bridge was blocking Sugar Creek and endangering more lives and property in the village.

Earlier in the day, SCS State Conservationist Graham T. Munkittrick, in agreement with the Federal Emergency Management Agency, had received authorization to spend up to \$3 million in emergency watershed protection funds, under Section 403 of the Agricultural Credit Act of 1978, to clear and stabilize area streams that threatened immediate loss of more lives and property.

SCS set up an emergency center in the Kittanning Field Office. Four field teams, consisting of engineers and technicians, spent daylight hours at the streams planning the work and evenings writing the plans. A special SCS contracting team at the center awarded 15 contracts by August 30.

The contractors, supervised by SCS, divided the work into two parts. First, they concentrated on removing debris. They filled a surface mine pit with the debris and covered and seeded it. They also seeded disturbed areas along the streambanks for a total of 70 acres seeded and mulched. Then they removed gravel bars, re-shaped the streambeds, and stabilized the streambanks with 20,000 tons of rock (riprap) and several hundred rock-filled wire mesh boxes (gabions).

By the end of September, they had returned the streams to their pre-flood condition at a cost of \$1 million, 30 days after SCS awarded the contracts.



Top photo, the receding waters of Sugar Creek revealed a debris-choked channel. Bottom photo, under SCS supervision, the debris was removed and the streambank returned to its pre-flood condition.

Frederick E. Bubbs,  
public information officer, SCS, Harrisburg, Pa.



## Youth Learn Job Skills and Respect for the Environment

On the 4,700 acres of the Smokey House Project in Vermont, local high school students are developing job skills in forestry, agriculture, carpentry, and auto mechanics. The Soil Conservation Service has assisted with conservation planning for the project.

Smokey House youth help manage about 2,500 acres of forest land, a sheep farm, a solar greenhouse, and a garden where they grow vegetables to sell to local stores and restaurants. SCS provided technical assistance in drawing up a 10-year management plan for the forest land and in conservation planning for other areas. In the garden, students rotate their crops and plant winter rye to protect the soil over the winter.

Most students at Smokey House have had difficulties in a traditional school setting. While they experiment with different careers, they receive the minimum wage for their work and earn academic credit.

Three dairy farms at Smokey House are managed through lease arrangements. For the dairy farms, SCS assisted with conservation planning which included stripcropping, crop rotations, annual soil tests, and waste management. The conservation plans have been incorporated into the lease agreements to insure that the conservation practices are applied to the land.

The Smokey House Project teaches youth specific job skills along with resource management and respect for the environment. "Ninety percent of our kids are having trouble with school when they come here," says Susan Curnan, director of the project. "In 1980, we had 68 students. Five of them went on to college, 9 took jobs, 28 returned to high school, and 15 continued in the Smokey House program. Although 11 students didn't finish school or the program, our rate of success is better than average for such programs."

**Ann Dudas,**  
public information officer, SCS, Burlington, Vt.

## Covered Bridges Saved From Floods and Fires

Three States have either moved or are ready to move 19th century covered bridges to save them from floods, decay, and arson. The Soil Conservation Service found the bridges at the sites of lakes planned for watershed projects.

Last year, Ohio moved a bridge in Fairfield County to an outdoor education area where it spans a long, narrow part of a pond. Pennsylvania plans to move a Snyder County bridge to a flood channel in a nearby town, at about half the cost of building a new bridge.

West Virginia will move a bridge to a lake at a State conference center in Jackson County for thousands of fair-goers to enjoy each year. Workers will

place the bridge on sandstone abutments salvaged from the ruins of another covered bridge by the U.S. Marine Corps.

The project sponsors nominated these bridges for the National Register of Historic Places because the bridges represent different stages in the evolution of bridge engineering. The National Historic Preservation Act of 1966 encourages Federal agencies to avoid unnecessary destruction of such historic structures.

In their new locations, the bridges will be better maintained, more available to the public, and safer from arson, which is a serious threat to the wooden bridges.

**Donald L. Comis,**  
assistant editor, *Soil and Water Conservation News*, SCS, Washington, D.C.



One of only 18 covered bridges left in West Virginia, the Staats Mill bridge will be relocated from the site of a watershed project to a State Future Farmers and Future Homemakers of America camp.

Photo, Larry Sturm, district conservationist, SCS, Ripley, W. Va.

# Shoreline Erosion Control

## Groins and Grasses Save Island Gardens

The superintendent of the Elizabethan Gardens on Roanoke Island in North Carolina used Soil Conservation Service help to save the gardens from the wave erosion that threatens much of the State's shoreline.

Between 1959 and 1961, Louis Midgett, superintendent of the gardens, built 14 wooden fence groins, each extending perpendicular to the shore to trap and hold sand. Midgett did this in cooperation with the Dare County Soil and Water Conservation District (SWCD) when it was a part of the Pamlico SWCD.

Before Midgett built the groins, the wave action of Roanoke Island was rapidly removing the gardens' century-old live oaks, the brick columns at the gardens' entrance, and a substantial portion of the land itself.

By spring 1961, when the groins had trapped enough sand, SCS recommended planting coastal bermudagrass and American beachgrass to hold the

sand in place. Ten to 15 years later, native shrubs began replacing the grasses and small sand dunes are now beginning to develop over the groins.

A study made by SCS and East Carolina University in 1975 and 1977 showed that North Carolina was losing land along 1,239 miles of sound and river shorelines, at the rate of 0.5 to 5.2 feet a year. This erosion contributes more than 2 million tons of sediment to North Carolina's estuaries each year.

For years, people have been trying to fight the waves with everything from junk cars to expensive wooden bulkheads. Midgett proved that inexpensive groins and grasses can use the movement of waves to build, rather than destroy the shoreline.

**James H. Canterberry,**  
State resource conservationist, SCS, Raleigh, N.C.



Shoreline erosion threatened the Elizabethan Gardens on Roanoke Island, N.C., site of the Lost Colony. Louis Midgett, superintendent of the gardens, built wooden groins to trap the sand and save the century-old live oaks and the water gate entrance to the gardens.

## Corps Tests Grasses and Structures for Shoreline Erosion Control

The U.S. Army Corps of Engineers tested vegetation and 12 engineering devices on Louisiana's inland marsh shoreline as part of a 5-year national shoreline erosion control demonstration program that ended last year.

The program, authorized by the Water Resources Development Act of 1974, used vegetation and a total of more than 200 engineering devices at 16 demonstration sites throughout the Nation.

With technical assistance from the Soil Conservation Service, the Bogue Chitto-Pearl River Soil and Water Conservation District planted the vegetation for the Louisiana site, on the north shore of Lake Pontchartrain in Fontainebleau State Park, opposite New Orleans. The district managed to establish smooth and saltmeadow cordgrass in the intertidal zone and torpedograss on the upper beach areas, after their plants were washed away several times by storms, including two hurricanes.

The other engineering devices tested at Lake Pontchartrain were: concrete block revetments, filter fabric revetments, an offshore tire-and-timber breakwater, and three types of partially submerged offshore breakwaters (sills). The Corps of Engineers said all of the fabric revetments failed. They also said the concrete block revetments need design changes and may only work in special areas. The offshore breakwater and two of the three sills were successful.

The results were mixed, with some vegetation doing better than some of the physical devices and some of the physical devices doing better than the vegetation. The most successful vegetation in the intertidal zone was the smooth cordgrass, which the district transplanted from a nearby marsh.

**Randy Soileau,**  
district conservationist, SCS, Covington, La.



## U.S. Army Tests Rock Blankets and Tire Mattresses for Erosion Control

As part of a nationwide streambank erosion control demonstration program, the U.S. Army Corps of Engineers has tested three ways to protect streambanks in Virginia.

The Robert E. Lee Soil and Water Conservation District (SWCD) and the Pittsylvania SWCD sponsored the project on the Roanoke River, one-half mile downstream from the Leesville, Va., hydroelectric dam. The districts want to stop streambank erosion caused by the release of water from the dam two or three times a day. Farmers below the dam have lost a strip of bottom land more than 100 feet wide in several places.

The Corps of Engineers tested a tire mattress and two other revetments, each on different sections of the streambank. For the tire mattress, the engineers tied old car tires together in groups of four, with steel bands, and anchored them to

the bank. They planted 'Streamco' purpleosier willow cuttings in the soil below the tire centers. They also planted 'Kentucky 31' tall fescue at the top of the bank, above the tire mattress, and placed rocks below the tires, at the bottom of the bank.

On a second section, they put rocks in a trench cut parallel to the river bank. Then they covered the rocks with soil and planted grass. When the bank recedes to the trench, the rocks should settle on the slope and protect it from further erosion. At the third section, they placed rocks on a contoured ledge they built on the bank, several feet above the riverbed. The rocks will slough down as erosion undercuts the ledge.

The Virginia project was one of more than 60 demonstrations in a 5-year program that ended last year, authorized by the Water Resources Development Act of 1974.

**R. E. McClenny, Jr.,**  
district conservationist, SCS, Appomattox, Va.

## Corps Books Available

The U.S. Army Corps of Engineers has summarized its 830-page final report on the shoreline erosion control program in a 36-page introductory brochure and three in-depth supplements which are available to the public free.

The brochure has color photographs and diagrams to accompany descriptions of the shoreline erosion process and ways to control it. It also discusses factors to consider before starting a project and recommends sources for more information.

The brochure has a postcard attached for ordering the supplements which are written for specific users: property owners, local government officials, and engineers or contractors.

Single copies of the brochure, "Low Cost Shore Protection," are available from: John G. Housley, Section 54 Program, U.S. Army Corps of Engineers, USACE (DAEN-CWP-F), Washington, D.C. 20314.



Following Soil Conservation Service recommendations, two soil and water conservation districts called on the U.S. Army Corps of Engineers for help in stopping severe streambank erosion along the Roanoke River (above).

In a demonstration project (above right), the Corps tried erosion control methods such as tire mattresses (foreground) and rock revetments (background).

# Management Tips

Readers are invited to submit "Management Tips" to the editor, *Soil and Water Conservation News*, Soil Conservation Service, P.O. Box 2890, Washington, D.C. 20013

## Virginia Districts Have Know-How for News

Six soil and water conservation districts (SWCD's) in Virginia are making the most of local news media to publicize their conservation efforts and accomplishments.

Besides using local newspapers, the Robert E. Lee SWCD is using television and radio to spread the word on its conservation work. In October 1981, Soil Conservation Service District Conservationist Warren Friend, located in Amherst, worked with a local television station on producing a week's worth of short conservation news stories to be run during National Resources Conservation Week. Friend also puts together 5-minute radio shows that air every weekday afternoon, and he has just begun an hour-long conservation talk show that airs once a month.

As the host of the talk show, Friend chooses a theme such as soil erosion and sediment control, forest management, or gardening and brings in experts to discuss the topic. Friend and the experts then take calls on the air from listeners. Friend says that he contacted the radio station with the idea, and they liked it. "It's not difficult to get on the radio, and it's one way of getting the word out on resource conservation," he says. "We just do it; it's really not that complicated."

For more than 5 years, the Headwaters SWCD has had a radio news person and two newspaper reporters attend every district board meeting. District Clerk Jo Ann Mowbray says that the newspapers cover topical and local interest aspects of the district's activities. At its annual awards banquet, the district gives the news reporters special recognition.

SCS Soil Conservationist C. Frederick Copenhaver of the Daniel Boone SWCD says that local newspapers will often send a reporter and photographer to accompany him on field assignments if he gives the newspaper staff a few days' notice. A recent article in a local newspaper profiled the district chairman. "The personal feature approach," says Copen-

haver, "gives local residents something to relate to. In the future, we hope to have more directors' profiles in the paper." The district also sponsors a 5-minute radio show once a week.

Prince William SWCD Executive Assistant Diana Weand writes an average of one story a week. "Generally everything is printed that we send in to newspapers or other publications," says Weand. "The key to getting your articles in print is local color." She writes stories on topics such as the district's seedling program, Arbor Day observances, and the district's conservation teacher of the year. The district also has had articles in the "Conservation Conversation" column of the *Manassas Journal-Messenger*. "The stories must apply to local people," Weand says. "It's important that districts be visible. We have to let the public know what we're doing and that we have ideas and assistance available to help them."

SCS District Conservationist Randolph Maupin with the Shenandoah Valley SWCD prefers to have the reporter do the writing. Maupin contacts editors and reporters about conservation activities. Reporters generally attend district board meetings; but when they don't, Maupin calls them to relay the major points of the meetings. Maupin says that he uses the media to educate the public and give the district more identity. "I don't think the districts get enough credit for what they do," he says. "District directors work hard and they really deserve the recognition."

Adapted from an article in the January-February 1982 issue of *Grassroots*, published by the Virginia Soil and Water Conservation Commission.

## Call It Dirt or Soil, Without It We'd Go Hungry

Gene Warren, a public information officer with the USDA Soil Conservation Service in Alexandria, La., took a philosophical look at soil in an article he wrote recently. "It's easy to get emotional about towering forests, swaying prairie grasses, galloping deer, soaring eagles, or babbling

brooks," says Warren. "Somehow or other there's a bit of romance in all of those things. But folks just don't get overwrought about dirt. When it's trod upon, probed into, or eroded away, you don't see a lot of tears shed.

"But dirt makes all those romantic things mentioned before possible. Take away dirt and there would be no trees, animals, grasses, or even babbling brooks. Dirt is the cradle of life.

"To a farmer, dirt is where you plant a seed to grow a plant that bears fruit to feed hungry people. If it weren't for good dirt, and lots of it, there would be no farms and no crops. Dirt sustains us.

"Early pioneers climbed up out of their boats and jumped down from their covered wagons to drive stakes into the best dirt. Towns and farms sprang up on dry hilltops, rich prairies, and river bottoms because those were the places where the dirt was right to grow food and fiber.

"SCS calls dirt 'soil' and has identified more than 211 different kinds of soil in Louisiana alone. Harry Rucker, the SCS State conservationist in Louisiana, says that soils are all different and need different treatment. He also says that some soils erode more easily than others and that some soils are best for crops while others are best for trees and grass. Some soils are also more suitable for building on than others. These characteristics of soil are important to engineers, contractors, city planners, homeowners, and woodland managers."

Warren says that Americans have got to stop blindly blazing a trail across the land without first looking down at the dirt. "We have a lot of crusades to clean up the water and air, protect endangered species of animals, save the forests, and stop damming streams. But you don't see many people crusading to save the soil, and you don't hear people say, 'This is an endangered dirt, so let's put it in a national refuge before it becomes extinct.' Dirt should be right up there with towering trees, soaring eagles, and babbling brooks because dirt gives life to all."



## Soil Survey Helps a City Live With Its Soils

The city of Holbrook, Ariz., is located on the Little Colorado River in Navajo County. The same soils and geologic formations that have created the nearby Painted Desert and the Petrified Forest National Park have given the people of Holbrook leaking gas lines, crumbling concrete, and cracked houses. An interim soil survey of the 18,720-acre city area, released this spring, will help city planners avoid some of the construction problems associated with the soils.

The Soil Conservation Service made the special soil survey of the city at the request of Holbrook's Mayor Libby Budenholzer in cooperation with the city and the Navajo County Natural Resource Conservation District. It is part of the SCS progressive soil survey of Navajo County, Central Part.

The SCS soil survey party leader, Alfred A. DeWall, says that soil investigations in and around Holbrook revealed more than 2,000 acres of Navajo clay, a heavy, saline clay with high shrink-swell potential. The shrinking and swelling of the soil causes houses to crack. In areas where a static water table at 10 to 12 feet beneath the surface prevents the clay from drying out, shrink swell is not as big a problem. DeWall says that building extra wide and extra strong foundations has been successful in these areas.

About 2,600 acres of the survey area are made of soils high in gypsum. When it rains, the gypsum dissolves causing houses to settle and crack. Diverting the rainwater away from the houses usually reduces the problem. Homeowners are also warned not to overwater shrubbery close to their houses.

DeWall says that although these and other soils in the Holbrook area present many problems to construction, most of them can be overcome with certain adaptations in design and management practices. The soil survey of Holbrook coupled with onsite investigations for specific structures will help the city identify potential problem areas and adapt to adverse soil conditions in the area.

The soil survey of Holbrook includes interpretations of the soils' suitability for engineering uses, recreation, community development, and sources of construction materials. The citizens of Holbrook expect the soil survey to save them money, time, and aggravation in locating suitable building sites, choosing proper building materials, and designing buildings that can withstand the soil conditions. Mayor Budenholzer says the resource information in the survey will be used in developing the city's long-range resource management plan.

**Douglas R. Immekus,**  
district conservationist, SCS, Holbrook, Ariz.

## Soil Surveys Are Not Just a Farm Management Tool

Soil surveys help land users protect fragile soil, water, and related resources. Each published soil survey contains maps and detailed descriptions of soils in a wide area, typically a county. A survey can be used to determine the limitations of each soil for farming, ranching, forestry, urban development, recreation, wildlife, and many other uses. Some of those "other uses" may be surprising says Claude Crowley, head of the information staff at the Soil Conservation Service South National Technical Center, Ft. Worth, Tex.

From the 11 southern States he serves, Crowley collected some examples of unusual uses for soil surveys:

- Locating concentrations of woodcocks;
- Pinpointing flood-prone areas by soil type;
- Mapping potential flood areas in the event of a hurricane, areas of high ground, and escape routes;
- Looking for areas where a pine tree fungus is most likely to occur;
- Identifying soil samples taken from the car fender and shoes of a person suspected of abduction;
- Locating campsites and study areas for a canoe trip;
- Helping city officials route underground utilities to avoid corrosive soil;

- Determining sites for seismic explosions in oil exploration;
- Locating soil suitable for making adobe brick;
- Determining suitable sites for underground houses;
- Finding suitable sites for unusual plants;
- Locating soils likely to be used for growing illegal crops; and
- Locating old house sites.

## Conservation District Tips Off Landowners on Easy Ways to Save Soil

The Northeast Soil and Water Conservation District in Louisiana says that more individuals should join the fight against erosion right where they live. In its monthly newsletter, the district told landowners about some easy, low-cost conservation practices that can save a lot of soil.

District leaders say that in the Mississippi River Delta area alone, keeping grass on "turnrows" at the edges of crop fields could save more than 220,000 tons of soil a year. Planting on the contour on sloping fields could save as much as 8 tons of soil per acre per year. Leaving crop residue on the soil surface could save 10 million tons of soil a year. Maintaining grass cover on the State's 21,000 acres of school grounds could prevent more than 21 million tons of soil from washing into lakes and streams.

The district also recommends maintaining grass cover on the 20,000 acres of levees on the State's 40,000 farm ponds; on ditch banks; on strips adjacent to lakes, streams, and bayous; and on farm road banks. Wildlife plantings can benefit wildlife and prevent soil erosion. Just closing a pasture gate at the right time can keep pasture grasses growing vigorously while they hold the soil.

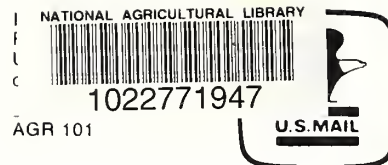
Any local Soil Conservation Service office can provide technical assistance to individuals or groups who want to control soil erosion.

Moving?

Send present mailing label and  
new address including zip code to:

U.S. Department of Agriculture  
Soil Conservation Service  
P.O. Box 2890, Room 0054-S  
Washington, D.C. 20013

Official Business  
Penalty for private use, \$300



THIRD CLASS MAIL  
BULK RATE

## New Publications

### Six Steps to a Sustainable Society

by Lester R. Brown  
and Pamela Shaw

In this study the authors have determined that "the world is on the edge of an environmental crisis that is undermining the global economy. The basic biological systems—forests, grasslands, fisheries, and croplands—that supply our food and many of the raw materials for industry are deteriorating in much of the world."

The study updates and distills an earlier study by Brown, "Building a Sustainable Society."

Brown and Shaw assert that "if we cannot conserve the topsoil that is used to produce our food, civilization as we know it cannot survive. An understanding that soil loss eventually means lower productivity, which in turn means less and costlier food, is needed if a national soil conservation ethic is to be adopted."

In addition to addressing the problem of a deteriorating resource base and the need to protect cropland, the authors discuss stabilizing world population, reforesting the Earth, moving beyond the throwaway society, conserving energy, and developing renewable energy.

"Six Steps to a Sustainable Society" (Worldwatch Paper 48) is available for \$2 from Worldwatch Institute, 1776 Massachusetts Avenue, N.W., Washington, D.C. 20036. "Building a Sustainable Society" is available for \$14.95 from the same address.

### Soil Conservation

by Norman Hudson

In this second edition, the author includes new information on significant advances in soil science and shows how the research and methods of soil conservation can be adapted from North American practices for use in countries around the world.

Concentrating on improved land use and crop management, the author discusses recent findings on population pressures and food production, rainfall erosion, developments in simulation and mathematical modeling, and problems of soil conservation for subsistence farmers in the tropics.

This book may serve as a useful text not only for agricultural engineers but also for students of agriculture, forestry, geography, geology, and ecology.

It is available for \$17.50 from Cornell University Press, 124 Roberts Place, Ithaca, N.Y. 14850.

### The American Cropland Crisis

by W. Wendell Fletcher  
and Charles E. Little

This is a book about "why U.S. farmland is being lost and how citizens and governments are trying to save what is left."

Some of the topics discussed are taxes, districting, zoning for food, the politics of preservation, farmland as a strategic resource, productivity and ecology of agriculture, and the search for new approaches to saving the land.

This book is available for \$7.95 from the American Land Forum, 5410 Grosvenor Lane, Bethesda, Md. 20814.

### Approved Practices in Soil Conservation

by Duane A. Bosworth  
and Albert B. Foster

This 470-page book explains the major conservation practices and gives simple directions for putting them to use. It is useful to landowners who might apply conservation practices on their own or with a minimum of technical help. The book is also intended for wide use by vocational educators and students. The 20 chapters in the book include such topics as conservation tillage, farming on the contour, planting windbreaks, and using the land for recreation.

This book is available for \$16.65 from Interstate Printers and Publishers, 19-27 North Jackson Street, Danville, Ill. 61832.

### Trees for Reclamation

by the U.S. Department of  
Agriculture, Forest Service

This publication is a collection of 30 papers presented at the symposium "Trees for Reclamation in the Eastern U.S." held in Lexington, Ky., October 1980. All the authors are specialists in their respective fields.

The papers cover almost all aspects of the reclamation and reforestation of mined land. Some papers are more specific and present research done in a particular State.

A limited number of single copies of this publication (General Technical Report NE-61) are available from USDA, Forest Service, Northeastern Forest Experiment Station, Broomall, Pa. 19008.

### Soil and Water Conservation Engineering

by Glenn O. Schwab,  
Richard K. Frevert,  
Talcott W. Edminster,  
and Kenneth K. Barnes

The purpose of this third edition is to provide a professional text for agricultural engineering students or for anyone interested in the application of engineering principles to the solution of soil and water management problems.

Included in the book is information on all the engineering phases of soil and water conservation as well as a limited section on hydrology. Other chapters cover such subjects as erosion control, earth dams, flood control, drainage, and irrigation. There are also many useful photographs, diagrams, charts, and formulas.

This book is available for \$32.95 from John Wiley and Sons, Inc., One Wiley Drive, Somerset, N.J. 08873.

### Recent Soil Surveys Published

by the Soil Conservation Service

**California:** Tulare County.  
**Idaho:** Idaho County.  
**Illinois:** Champaign County.  
**Indiana:** Clay County.  
**Iowa:** Buchanan County and Mills County.  
**Kentucky:** Russell County.  
**Louisiana:** Pointe Coupee Parish.  
**Missouri:** Greene and Lawrence Counties.  
**Montana:** Cascade County.  
**Nebraska:** Butler County and Otoe County.  
**New Mexico:** Colfax County, Otero County, and Union County.  
**Oregon:** Wasco County.  
**Texas:** San Saba County.